

Acc. Nr: AP0044617

Ref. Code: UR0497

PRIMARY SOURCE: Klinicheskaya Meditsina, 1970, Vol 48,
Nr 1, pp 119-126

AFFECTION OF THE LIVER AND BILE DUCTS IN SYSTEMIC
SCLERODERMA

Aprosina, Z. G.; Guseva, N. G.;
Potekayeva, M. A.; Gritsman, N. N.

On the basis of examinations of 180 patients with systemic scleroderma the authors revealed the character and incidence of clinical signs of involvement of the liver bile ducts; in 30 cases (in 19 — according to autopsy data, in 11 — according to biopsy of the liver) morphological changes in the liver were studied.

REEL/FRAME
19771294

Acc. Nr:

AP0052062

Ref. Code: UR0396

PRIMARY SOURCE: Patologicheskaya Fiziologiya i
Eksperimental'naya Terapiya, 1970, Vol 14,
Nr 1, pp 43-45

REPRODUCTION OF EXPERIMENTAL ENDARTERITIS BY HORMONES

A. N. Shabanov, Ts. Ya. Gudynskaya, M. A. Patekayeva, D. V. Komov

Hydrocortisone and testosterone were injected to male rabbits for 3 months, daily. Vessels of the limbs, abdominal and thoracic aorta and renal artery were examined. Unusual changes, varying from mucoid swelling to plasmatic impregnation were revealed in all the groups of rabbits. Analogous changes were seen in histological and histochemical examination of the vessels at the early stages of endarteritis obliterans.

REEL/FRAME
19820600

POTEKHIN, A. I.

RADIATION AND PROPAGATION OF ELECTROMAGNETIC WAVES
IN AN ANISOTROPIC MEDIUM

By A. I. Potechin

Translation of "Izлучение и распространение
электромагнитных волн в анизотропной среде."
"Nauka" Press, Moscow, 1971.

NASA TT F-743

USSR

UDC: 577.4

GAVRILOV, M. A., DEVYATKOV, V. V., POTEKHIN, A. I., CHITCHOVSKIY, A. B.,
PUPYREV, Ye. I.

"Technical Requirements for an Automated System for Logical Synthesis of
Discrete Controlling Devices. Using Procedures of Dialog With a Computer
in Synthesizing Such Devices. By Way of Discussion"

Inform. materialy. Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR
(Informational Materials. Scientific Council on the Complex Problem of
Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54), pp 62-112
(from RZh-Kibernetika, No 5, May 72, Abstract No 5V325)

[No abstract]

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- 9 -

USSR

UDC 538.56

POTEKHIN, ANATOLY IVANOVICH

"Radiation And Propagation Of Electromagnetic Waves In Anisotropic Medium"

Izuchenie i rasprostraniye elektronnnykh voln v anizotropnoy srede
(cf English above), Moscow, Izd. "Nauka," 1971. 76 pp. 8 fig. 16 ref. 21 k.

Abstract: In the work a systematic discussion is given of problems with respect to the dissemination in a uniaxial anisotropic medium of electromagnetic waves radiated by a current sheet, by an infinitely long filament or by an elementary dipole. The field at any distance from the source is computed by rigorous methods. The orientation of the axis of the filament with the current or of the axis of the dipole is assumed to be parallel or nonperpendicular to the axis of anisotropy. All problems are solved by a single method with which the clear "physical meaning" remains at all stages of computation. The answer is given in closed form in all the cases considered (plane, cylindrical, conical, and quasi-spherical waves).

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- 63 -

USSR

POTEKHIN, ANATOLIY IVANOVICH, Izlucheniye i rasprostraniye elektromagnitnykh voln v anizotropnoy srede, Moscow, Izd. "Nauka," 1971. 76 pp. & fig. 16 ref. 21 K.

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1. Waves of 1st and 2nd types	7
2. Radiation of a flat sheet with a current	16
3. Radiation of cylindrical waves by a current filament	23
4. Radiation of conical waves by a current filament	34
5. Radiation of quasi-spherical waves by an electric dipole	53
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2/2

1/2 028 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--ON THE THEORY OF ELECTROMAGNETIC WAVE PROPAGATION IN A GYROMAGNETIC

MEDIUM -U-

AUTHOR-(02)-POTEKHIN, A.I., YURGENSON, R.R.

COUNTRY OF INFO--USSR

SOURCE--RAIODTEKHNIKA I ELEKTRONIKA (RADIO AND ELECTRONICS), 1970, NO 2,
PP 307-315

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ELECTROMAGNETIC WAVE PROPAGATION, ANTENNA AZIMUTH COVERAGE,
MAGNETIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1862

STEP NO--UR/0109/70/000/002/0307/0315

CIRC ACCESSION NO--AP0130689

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0130689
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PROPAGATION OF ELECTROMAGNETIC
WAVES IN AN INFINITE AZIMUTHALLY MAGNETIZED MEDIUM IS INVESTIGATED.
THE SOLUTION OF THIS PROBLEM IS OBTAINED BY INTEGRATION OF THE FOURTH
ORDER EQUATIONS FOR THE FIELD VECTORS IN THE FORM OF NEW SPECIAL
FUNCTIONS. THE ASYMPTOTIC EXPANSION OF THE SOLUTIONS AND THE
APPROXIMATE SOLUTION FOR THE FIELD VECTORS ARE GIVEN IN THE FORM OF
DEGENERATE HYPERGEOMETRIC FUNCTIONS.

UNCLASSIFIED

USSR

P
UDC: 621.375.4

ARMENSKIY, Ye. V., GULYAYEV, Yu. T., and POTEKHIN, A. M.

"Transistor Cascode Amplifier of the Common Emitter - Common Collector Type for the Middle Frequencies"

Moscow, Izmeritel'naya Tekhnika, No 7, 1970, pp 57-59

Abstract: Cascode amplifiers, which have recently been receiving a good deal of attention in connection with measurement technique and electrical automatic systems, are very promising for use as variable voltage amplifiers in the middle frequencies when connected in the common emitter and common collector configuration. The article shows that an amplifier of this type has a gain one to two orders higher than the ordinary amplifier with common emitter in practical circuits with a reduction in the output resistance. The basic cascode circuit and its equivalent are given including an analysis of the equivalent circuit. Possible values of circuit components for practical cases are given.

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USSR

UDC 669.15.018.295

BOGACHEV, I. N., POTEKHIN, B. A., MASLAKOVA, T. M.

"Plasticity of Cast Martensite-Aging Cavitation-Resistant Stainless Steels"

Povysh. konstruktivn. prochnosti stalej i splavov. No 2 -- V sb. (Improving the Structural Strength of Steels and Alloys. No 2 -- collection of works), Moscow, 1970, pp 54-57 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4I626)

Translation: The mechanical properties and cavitation resistance of steel with 12-13% Cr, 7-9.6% Ni, 0.02-0.05% C, Al, Ti, and Mo and also the presence of chemical inhomogeneities of the ingot were investigated. The results of the experiment permitted recommendation of these steels for use in shipbuilding, home construction, and hydraulic turbine construction.

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USSR

LOVTSOV, V. V., RIVKIN, L. A., POTEKHIN, B. I., ANDRIYANOV, A. M.

"New Air Distributors with Twisted Supply Streams"

Naladka i Proyektir. Sistem Prom. Ventilyatsii i Konditsionir. Vozdukha [Adjustment and Planning of Commercial Ventilation and Air Conditioning Systems -- Collection of Works], Moscow, 1971, pp 10-21, (Translated from Referativnyy Zhurnal, Mekhanika, No 4, 1972, Abstract No 4 B309 by A. S. Malyutin).

Translation: New air distributors have been created, distinguished by great damping of relative velocities and temperatures, as well as simplicity of design: an input pipe, a wall ejection air distributor, a floor ejection air distributor. Comparative are presented on the air distributors with similar devices created earlier, showing that when the new air distributors are used, the quantitative loads can be increased and the working temperature difference can be up to 50°. The air distributors suggested allow the quantity of supply air to be changed between 10 and 150% of the nominal quantity without reducing the quality of air distribution.

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POTEKHIN

G. S.

Combustion Explosion

(Symposium in Leningrad)

[Article by Candidate of Technical Sciences G. S. Potechin;

Kossov, Valentin Akademik Nauk SSSR, Russia; Vol. 41, No. 12,

December 1971, pp. 55-61]

JPRS 55-
29 46 72

INVESTIGATION OF PROCESSES OF COMBUSTION AND EXPLOSION

The Third Symposium on Combustion and Explosion, held in Leningrad on 5-10 July, was organized by the AS USSR jointly with the Ministry of Higher and Specialized Secondary Education RSFSR and the Ministry of Chemical Industry USSR. Heard and discussed were over 160 reports and presentations presented by about 60 organizations from more than 20 cities of our country. The work was done in three sections: combustion, detonation and kinetics; most of the reports (60) were examined in the section on combustion.

The program of the plenary sessions included survey reports which shed light on practical achievements in the investigated area and also presented the scientists with important problems requiring theoretical development. They included the reports of I. A. Vulgin on "Turbulent combustion of gases (outline of the contemporary state of the theory)", V. V. Ponomarenko on "Problems in the analysis of combustion of a flare of organic fuel", A. D. Marqulin on "The contemporary state and certain problems of the theory of combustion of condensed systems" and of Ya. S. Soshnikov on "Problem of ultrasonic combustion". Some points of those reports were the subject of discussions in the sectional sessions.

Two reports at the general sessions were presented in honor of the memory of outstanding scientists who died in the period between the second and third symposia — namely Ya. Ye. Zel'dovich (about the contribution of B. A. Frank-Kamenetskii to the theory of combustion) and one by V. M. Pomerantsev entitled "The atomization, evaporation, and combustion of liquid fuel", dedicated to I. I. Palayev).

USSR

UDC: 621.371.095.1

POTEKHIN, V. A., GLUKHOV, A. N., KLIMOV, I. Z.

"Generalized Polarization Parameters of Electromagnetic Waves of Arbitrary Form"

Khar'kov, Radioelektronika letatel'n. apparatov--sbornik (Aerospace Electronics--collection of works), vyp. 1, Khar'kov Aviation Institute, 1972, pp 56-61 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12A298 [résumé])

Translation: The paper demonstrates the possibility of representing an electromagnetic wave of arbitrary shape at some point in space as the sum of plane waves propagating in three mutually orthogonal directions. Analytical expressions are presented for the degree of polarization and the geometric characteristics of ellipses of polarization of additive plane waves and integrated space waves. Bibliography of 4 titles.

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USSR

UDC: 621.396.96:621.371

POTEKHIN, V. A., RODIMOV, A. P., GLUKHOV, A. N.

"On the Degree of Polarization of Electromagnetic Waves Randomly Scattered by a Set of Reflectors"

Khar'kov, Radioelektronika letatel'n. apparatov--sbornik (Aerospace Electronics--collection of works), vyp. 1, Khar'kov Aviation Institute, 1972, pp 62-66 (from RZh-Radictekhnika, No 12, Dec 72, abstract No 12G27 [résumé])

Translation: The degree of polarization of a plane quasimonochromatic partially polarized electromagnetic wave randomly scattered by a set of spatially distributed elementary reflectors is represented in terms of the second moments of the statistical scattering matrix of the target, and the polarization parameters of the irradiating monochromatic wave. The resultant expression is investigated for the extremum with respect to the modulus of the polarization coefficient of the incident field; in view of the invariance of the degree of polarization to selection of the polarization, this investigation is made in the target basis proper. Bibliography of 6 titles.

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USSR

UDO 621.396.677.095.1:621.396.96

POTEKHIN, V.A., DZHUN¹, V.I., KANAREYKIN, D.B.

"Concerning The Choice Of Receiving Antenna Polarization In Radar Stations With A Synthesized Aperture"

Radiotekhnika i elektronika, Vol XVII, No 3, Mar 1972, pp 488-492

Abstract: Previous works have shown that in principle the resolution of radar systems with a synthesized aperture (RSA) can be improved by the method of polarized selection of target and background signals. In the present paper the possibilities are considered of such an increase of the resolution of RSA under the condition of steadiness and ergodicity of the interference reflections. The results obtained can be used in all areas of radio engineering where antenna arrays are used (radio astronomy, radio navigation, etc.) for an evaluation of the gain in the resolution because of polarized selection. 1 fig. 9 ref.

Received by editors, 24 Dec 1970.

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1/2-017 UNCLASSIFIED PROCESSING DATE--11SEP70
TITLE--LIQUID PHASE OXIDATION OF ALIPHATIC KETONES -U

AUTHOR--rif, i.i., potechin, v.m., proskuryakov, v.a., mikheyenko, t.i.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970, 43(2), 372-7

DATE PUBLISHED----70

P

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--OXIDATION, ALIPHATIC KETONE, THERMAL DECOMPOSITION, ORGANOLEAD COMPOUND, ACETONE, CARBOXYLIC ACID, CHEMICAL REACTION MECHANISM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0080/70/043/002/0372/0377

PROXY REEL/FRAME--1987/1217

CIRC ACCESSION NO--AP0104583

UNCLASSIFIED

272 017

CIRC ACCESSION NO--AP0104583

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE TITLE REACTION WAS INVESTIGATED ON 6,UNDECANONE (I) OBTAINED BY THERMAL DECOMP. OF PB CAPROATE. I (50 ML) WAS OXIDIZED WITH AIR (CONTINUOUS FLOW, 0.5 1.-MIN.) 3 HR AT 140DEGREES-18-KG-CM PRIME2 TO GIVE A MIXT. OF MONOCARBOXYLIC ACIDS (FROM ACETIC TO CAPROIC), GAMMA, METHYL BUTYROLACTONE, GAMMA, ETHYL BUTYROLACTONE, 3,6 AND 2,6,UNDECANEDIONES, GAMMA, OXOVALERIC, AND GAMMA AND DELTA,OXOCAPROIC ACIDS. THE PRESENCE OF THESE COMPD'S. PROVES THAT THE REMOTE (FROM C:O) CH-SUB2 GROUPS ARE ATTACHED BY O, CONTRARY TO THE OPINION OF EARLIER AUTHORS STATING THAT IN THE OXIDN. OF THE ALIPHATIC KETONES, ONLY THE CH SUB2 NEXT TO C:O IS OXIDIZED (ALPHA,MECHANISM). NO BETA,DIKETONES WERE FOUND IN THE PRODUCT; THEY ARE FORMED BUT UNDERGO OXIDATIVE DECOMP.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--INFLUENCE OF METAL O,ALKYLALKYLDITHIOPHOSPHONATES ON THE PROPERTIES
OF LUBRICANTS -U-
AUTHOR-(02)-GRISHINA, O.N., POTEKHINA, M.I.

CCUNTRY OF INFO--USSR

SCURCE--NEFTEKHIMIYA 1970, 19(2), 297-302

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--ANTIOXIDANT ADDITIVE, LUBRICANT ADDITIVE, PHOSPHATE ESTER,
ZINC COMPOUND, BARIUM COMPOUND, THIOL, NICKEL COMPOUND/(U)MS20
LUBRICATING OIL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1964

STEP NO--UR/0204/70/010/002/0297/0302

CIRC ACCESSION NO--AP0133808

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--13NOV70
CIRC ACCESSION NO--AP0133808
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZN, BA, AND NI O,ALKYL ALKYLDITHIOPHOSPHONATES ARE DIXON. INHIBITORS FOR OILS. ZN AND BA SALTS DECREASED THE CORROSION OF MS-20 OIL. METAL DITHIOPHOSPHATES WERE LESS EFFECTIVE THAN THE DITHIOPHOSPHONATES. NI SALTS WERE MORE ACTIVE ANTIOXIDANTS THAN ZN SALTS AT 150DEGREES, BUT LESS ACTIVE AT 170-200DEGREES. BRANCHING IN THE ZLKYL CHAIN INCREASED EFFECTIVENESS, BUT THE CHAIN LENGTH HAD NO EFFECT ON THE ANTCORROSION ACTIVITY. AT LARGER THAN 140DEGREES, THE ANTCORROSION ACTIVITY OF THE SALTS DECREASED. FACILITY: INST. ORG. FIZ. KHM. IM. ARBUZOVA, KAZAN, USSR.

UNCLASSIFIED

Lubricants and Lubrication

P UDC: 547.26'118'112-38:665.6

USSR

GRISHINA, O.N., and POTEKHINA, M.I. Institute of Organic and Physical Chemistry
imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan'

"Effects of Metal O-Alkyl-alkyldithiophosphonates on the Properties of Lubricating
Oil"

Moscow, Neftekhimiya, Vol 10, No 2, Mar-Apr 70, pp 297-302

Abstract: A study was carried out of the antioxidant and anticorrosion effects of O-alkyl-alkyldithiophosphonates $/R(R_1O)P(S)S_2M$ added to oil, in which R were normal and branched alkyl groups in the range up to C₆, R₁ normal and branched alkyl groups in the range up to C₈ and n-C₁₈H₃₇, and M - Ni, Zn, Ba. In tests on liquid petrolatum in the presence of Mn stearate, the antioxidant activity of these compounds decreased in the order Ni > Zn > Ba at 150°, decreased with an increasing chain length of R₁, increased when both R and R₁ were branched, and decreased with increasing temperatures in the 150-200° range. At 150° Ni salts were more active than Zn salts, while at 170-200° this relation was reversed because of the higher stability of Zn vs. Ni salts. Comparison of /Bu(iso-C₈H₁₇O)P(S)S₂Zn (I) with DF-11-I (Zn iso-octyl-Bu-dithiophosphate, II) and /Bu(Ph)P(S)S₂Zn (III) showed that the antioxidant activity increased in the order II < I < III. In anticorrosion tests carried out with the oil MS-20 in the presence of Mn stearate, Zn O-alkyl-alkyldithiophosphonates protected a Pb surface against

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USSR

GRISHINA, O.N., et al, Neftekhimiya, Vol 10, No 2, Mar-Apr 70, pp 297-302

corrosion more effectively than the corresponding Ba salts, while Ni salts had no protective effect. The activity of compounds which showed an anticorrosion effect was on the same level as that of DF-11 and Santolube-493. The C-octadecyl-octyldiphosphonates of Ni and Zn, which did not contain S, increased the corrosive effect produced by the oil in the tests. The anticorrosion activity of the compounds tested decreased with increasing temperatures in the 150-190° range.

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POTEKHINA, M. V.

SO: JPRS 55015
25 Jan 72

UDC: 162.11(47-21:47-22)

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1/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--CHEMICAL EQUILIBRIUM IN AN ADSORBED LAYER DURING THE SURFACE
IONIZATION OF MOLECULES -U-
AUTHOR--POTEKHINA, N.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. TEKH. FIZ. 1970, 40(3), 620-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL EQUILIBRIUM, LITHIUM CHLORIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1971

STEP NO--UR/0057/70/040/003/0620/0625

CIRC ACCESSION NO--AP0118930

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0118930

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RELATION BETWEEN THE FORWARD AND REVERSE RATES FOR THE REACTION MX FORMS AND IS FORMED FROM M PLUS X ON A SURFACE WAS STUDIED BY USING LiCl ON RE AS THE EXAMPLE. THE CONDITIONS WERE FOUND FOR REACHING A CHEM. EQUIL. BY USING THE EQUATIONS OF STATIONARY STATE; THEY CAN ONLY BE REALIZED AT TEMPS. BELOW THE IONIZATION THRESHOLD TEMP. IN WHICH CASE THE IONIC FLUX OF M PRIME POSITIVE IS NEGLIGIBLY SMALL. FACILITY: FIZ-TEKH. INST. IM. IOFFE, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC 621.313.333:538.4

ANDREYEV, A. M., BARANOV, G. A., FOLUBOVICH, G. P., POTEVIN, Yu. Y.

"Cylindrical Induction Pump with Cooled Internal Magnetic Conductor"

Riga, Magnitnaya Gidrodinamika, No 3, Jul-Sep 72, pp 150-151.

Abstract: The authors attempted to develop a cylindrical induction pump with a reliable, easy-to-use cooling system for the internal magnetic circuit, equal or nearly equal to traditional designs in hydraulic properties. An example diagramed for pumping liquid metal coolants at 850°C can deliver 326 m³/hr and develop a pressure of 4 kg/cm².

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USSR

UDC 629.12.053.1.001.5

POTEMKIN, A. E.

"Statistical Investigation of the Sensitive Elements of 'Kurs' Gyrocompasses"

Leningrad, Sudostroyeniye, No 2, Feb 73, pp 40-43

Abstract: A statistical study was made of the log records of 50 "Kurs" marine gyrocompasses produced within the 1956-1967 period, in order to ascertain the correspondence of their parameters with the nominal data. It was found that the "Kurs" gyrocompasses presently being produced are not inferior to many gyrocompasses of other designs with respect to the accuracy of the yielded information and the convenience of their operation. Recommendations are given on improvement of the testing procedure and revision of the log entries. It is recommended that such statistical research be continued for the improvement of production quality and for refinement of the operational data. 1 figure, 4 tables, 4 references.

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USSR

UDC 621.762.669.24

BUNTUSHKIN, V. P., and ~~POTEMKIN, A. I.~~, All-Union Scientific Research Institute of Aviation Materials

"On the Growth Rate of Particles of Refractory Oxides in Ceramic Nickel"

Kiev, Akademiya Nauk UkrSSR, Poroshkovaya Metallurgiya, No 7, Jun 72,
pp 82-86

Abstract: The results of a comparative study of the growth of Al_2O_3 , Y_2O_3 , and HfO_2 particles and their stability in nickel bases of various density are presented. The effect of defects of the base microstructure on the behavior of dispersed particles in nickel at temperatures above 800°C was established by direct methods of investigation of the alloy microstructure -- before and after high-temperature annealing -- and by determining their hot hardness. During short-time annealing (up to 5 hrs) the growth rate of the oxide particles in nickel with 3 to 5% porosity at temperatures of 1100, 1200, 1300, and 1400°C was high and was practically independent of the nature of the hardening phase. The ability of the oxide particles to grow in nickel at high temperatures in a dense nickel matrix fell sharply, decreasing in the series $\text{Al}_2\text{O}_3 \rightarrow \text{Y}_2\text{O}_3 \rightarrow \text{HfO}_2$.

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- 40 -

USSR

UDC 531/534:57

FROLOV, K. V. and POTEKIN, B. A.

"The All-Union Symposium 'The Effect of Vibration on the Human Organism and Problems of Protection From Vibration' (Moscow-Levkiiy, 3-6 Feb, 1972)"

Moscow, Izvestiya AN SSSR, Solid Body Mechanics No 4, 1972, pp 206 - 208

Abstract: The symposium was sponsored by the Academy of Sciences USSR, the All-Union Central Trade Union Council, the Ministry of Health of the USSR, and the Ministry of the Machine Tool and Tool Industry. One hundred and fifty scientists from 76 organizations attended and 70 reports were presented. The three primary sections were: 1) Some Mechanical Characteristics of the Human Body; 2) The Effect of Vibration on the Functional Systems of the Human Organism; 3) The Development of Systems to Protect Humans from Vibration. Round-table discussions were held on non-linear and transient properties of the dynamic characteristics of the human body, questions of predicting the effect of vibration on humans and the effect of vibration on the musculoskeletal system. The first session gave considerable attention to models of the human body, as well as to theoretical evaluation of simulation quality. Studies of various subunits of the human body, as well as the entire body, were reported.

The second session heard reports of complex clinical studies. Particular attention was given to mechanisms of humoral regulation, cellular circulation,
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USSR

FROLOV, K. V. and POTEKIN, B.A., Moscow, Izvestiya AN SSSR, Solid Body Mechanics No. 4, 1972, pp 206 - 208

biochemical indicators of blood coagulation , the effects of vibration on the endocrine glands and on the liver. The positive effects of vertical vibration in the treatment of kidney stones were reported.

The third session may be broken down into three subdivisions: Theoretical Aspects of Designing Effective Vibration Protection Systems and Design Principles; The Vibration-Insulating Properties of Various Materials; The Effectiveness of Protective Systems Used in Various Branches of Industry for Actual Machine Designs. Hydraulic and pneumatic mechanisms, single and multiple material barriers and mechanical devices were discussed.

The symposium covered vibration at all frequencies, from sounds to the action of pneumatic tools. The organization committee was directed to prepare for a following symposium "Man and Vibration" in 1973-1974.

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USSR

UDC 615.31:547.722.5.012.1:542.9

NAZAROVA, Z. N., and POTEMLIN, G. F., Rostov University

"Synthesis of Some Furylnitroolefins With Potential Biological Activity"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 6, No 10, Oct 72, pp 5-8

Abstract: The article describes the synthesis by the authors of new β -(5-nitrofuryl-2)- α -bromonitroethylene and β -(5-nitrofuryl-2)- α -phenyl-nitroethylene, as well as corresponding furyl-, 5-methylfuryl- and 5-halofurylnitroolefins, and considers the effect of substituents in the furan nucleus and side chain on their physiological activity. Yu. N. Il'ina took part in a portion of the work. The article also describes tests of some β -(furyl-2)-nitroolefins at the Chair of Microbiology of Rostov Medical Institute under the direction of Professor A. A. Kashayeva and at the All-Union Scientific Research Pharmacochemical Institute imeni S. Ordzhonikidze.

1/1

Steels

USSR

UDC 621.78.062.3

POTEMKIN, K. D., BRUNZEL', YU. M., and RYBAKOV, P. P.

"Restoration Carbonization of ShKh15 Steel"

Spetsial'nyye Stali i Splavy (Special Steels and Alloys -- Collection of Works), No 77, Metallurgiya Press, 1970, pp 229-233

Translation: The specifics of restoration carbonization of rolled ShKh15 steel in an atmosphere of an endothermic gas and in a mixture of exogas and methane are illustrated. The use of the endothermic gas allows optimal results -- full restoration -- to be produced. During restoration carbonization of steel in a mixture of exogas and methane in bell furnaces, incomplete carbonization occurs with a decrease in the decarbonized layer. The role of carbon in the heart in the process of restoration of carbon to the decarbonized layer is illustrated. 5 figures; 8 biblio. refs.

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1/2 017 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--SURFACE DECARBURIZATION OF STEEL IN THE PRODUCTION OF ROLLED

MATERIALS -U-

AUTHOR--(04)-POTEMKIN, K.D., NAGOVITSIN, V.V., ZAKHAROV, V.D., FEDOROVA,
Z.N.

COUNTRY OF INFO--USSR

P

SOURCE--METALLURG, FEB. 1970, (2), 36-39

DATE PUBLISHED-----70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--METAL ROLLING, METAL DECARBURIZATION, STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/0918

STEP NO--UR/0130/70/000/002/0036/0039

CIRC ACCESSION NO--AP0124579

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--13NOV70

2/2 017
CIRC ACCESSION NO--AP0124579

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SURFACE DECARBURIZATION OF STEEL IN THE PRODUCTION OF ROLLED SHEET AND STRIP WAS STUDIED. FACTORS AFFECTING DECARBURIZATION INCLUDE THE FACT THAT THE ORIGINAL BILLETS UNDERGO STRUCTURAL CHANGES AND THAT THESE ARE DISTRIBUTED IN A NON UNIFORM MANNER AROUND THE PERIMETER AND ALONG THE LENGTH. SIMILAR CHANGES ALSO TAKE PLACE WHILE HEATING THE MATERIAL BEFORE ROLLING. IN SOME CASES FURTHER DECARBURIZATION OCCURS WHILE COOLING THE ROLLED MATERIAL.

UNCLASSIFIED

AAC040717

P
UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent,

1-70

241488 HIGH-STRENGTH WIRE PRODUCTION despite main-
tained plasticity is afforded by a temper at
350°C between drafting (reduction) routines, residence
under tensile load comprising 70% of the yield limit.
Wire blanks diametered 6.5 mm at 460-470°C were
drawn down to 3 mm to provide 800-mm blanks or
testpieces which were heated at 350°C for 60 secs
in extended condition. These were then drawn down
to 1.8 mm and tested by prescribed methods. Their
strength was found to be higher than in a conventionally
drawn and treated wire product.

14.3.67 as 1140747/22-1, KOKHNO, V. I. & POTEMKIN, K. D.
(28.8.69) Bul 14/18.4.69. Class 18c. Int.C.I.C.-P.M.

19750358

USSR

UDC: 621.771.23

POLUKHIN, V. P., and POTEMKIN, V. K., Moscow Institute of Steel and Alloys

"Effect of Cold Processing on the Structure and Mechanical Characteristics of Hot-Rolled Sheet"

Moscow, Izvestiya VUZ--Chernaya Metallurgiya, No. 8, 1971, pp 101-105

Abstract: An explanation is given of the effect of cold rolling, after roasting and dressing, on the grain size and mechanical characteristics of 08 oxygen potential, low-carbon steel obtained from hot rolling. It is asserted that although a good deal of work has been done on the structure and mechanical qualities of steel in hot and cold rolling, little has been done on the change in characteristics of hot-rolled sheet steel after cold processing. Three hot-rolled sheets rolled to a thickness of 2.8 mm under different temperature conditions and with radically differing structure and characteristics but similar chemical compositions were used in the experiments. A detailed description, together with a table, of the processing through which these specimens were put, is presented. Photomicrographs of specimen structure at various stages of the processing are reproduced. The authors find that cold rolling leads to a reduction in the grain by 1-0.5 points in the middle

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UDC: 621.771.23

POLUKHIN, V. P., et al, Izvestiya VUZ--Chernaya Metallurgiya, No. 8, 1971, pp 101-105

of the specimens but does not affect the structure at the edges. Evening of the structure along the length of the sheet and some increase in plasticity over the hot-rolling procedure were also observed.

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30 -

USSR

UDC: 621.771.23

POLUKHIN, V. P., VISHNYAKOV, YA. D., POTEKIN, V. K., and CHUVILEK, V. P.,
Moscow Institute of Steels and Alloys

"Effect of the Temperature Conditions of Hot Rolling on Both Structure and
Mechanical Properties of 08 kp Steel"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya,
No 1, 1971, pp 82-85

Abstract: This study concerns the causes of quality impairments of thin hot-rolled strip up to 3 mm in thickness designed to be cold converted to 0.8-0.6 mm. The study involved the effect of temperature conditions of hot rolling on the structure and mechanical properties of 08 kp steel strip rolled for 2.8 mm under four sets of temperature conditions. Investigation of the strip along its length and width has found the central sections to have lower characteristics than those at the edges. The data given here are therefore referred to the middle sections along the width.

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POLUKHIN, V. P., et al, Izvestiya Vysshikh Uchebnykh Zavedeniy, Chernaya Metallurgiya, No 1, 1971, pp. 82-85

Figures in the original article show changes in the grain size, the strength properties, and plasticity along the length of the strip. It has been demonstrated that the optimum structure and mechanical properties-to-plasticity ratio are attained at 880°C at the end of rolling and 610°C for coiling.

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USSR

UDC: 621.039.553:621.382.3

POTEMKIN, V. V., KASHKAROV, P. K.

"Effect of Neutron Irradiation on the Low-Frequency Noise Properties of MDS Transistors"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 9, Sep 72, pp 1995-1996

Abstract: The MDS transistor is a unipolar device. This is the reason for its weak sensitivity to any kind of structural defect. With this in mind, the authors investigated the effect of neutron bombardment on the current-voltage and noise curves of MDS transistors. Devices with an induced P-channel were studied with two types of dielectrics: silicon nitride and silicon dioxide. The current-voltage characteristic was almost unchanged by exposure to a neutron flux of 10^{12} - 10^{13} neutrons per sq. cm at an energy of 14 MeV. The threshold voltage was raised by only 0.3-0.5 V. Noise properties were considerably altered. Internal noises were tripled on the average in devices with both types of dielectric. It was also found that the noise spectra of MDS transistors are changed by neutron irradiation, especially low-noise devices with silicon nitride dielectric. In conclusion the authors thank Ya. A. Fedotov, O. V. Sopov and G. Ye. Belovitskiy for assistance and interest in the work.

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USSR

UDC 539.612.2:538.23

KURDYUMOV, N. N., and POTEMKIN, V. V., Moscow State University
imeni M. V. Lomonosov

"Dependence of Noise of Thin Magnetic Films on Their Static Parameters"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 3,
Mar 71, pp 663-664

Abstract: Experiments were performed with circular films made by vacuum sputtering in the presence of a constant magnetic field with a spot diameter of 10 mm and magnetic layer thickness of 2,000 Å. The noise properties were studied as functions of the critical fields H_c and H_s (anisotropy field and coercive force), forms of static hysteresis loop, and dispersion parameter $\Delta_{0.7}$. The results indicated that the primary cause for

fluctuations on the transverse component of the magnetic flux upon cyclical switching of the thin films consists of the fluctuations involved in individual switching events, the volumes of local areas opposite directions, as well as fluctuations

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USSR

KURYUMOV, N. N., and POTEKIN, V. V., et al., Fizika Metallov i Metallovedeniye, Vol 31, No 3, Mar 71, pp 663-664

in local portions of the film of values of critical fields at which switching occurs. Films with most nearly rectangular hysteresis loops have the best noise characteristics.

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UDC 539.612.2:538.23

USSR

KURDYUMOV, N. N., and POTEKIN, V. V., Moscow State University
imeni M. V. Lomonosov

"Dependence of Noise of Thin Magnetic Films on Their Static Parameters"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol. 31, No 3,
Mar 71, pp 663-664

Abstract: Experiments were performed with circular films made by vacuum sputtering in the presence of a constant magnetic field with a spot diameter of 10 mm and magnetic layer thickness of 2,000 Å. The noise properties were studied as functions of the critical fields H_k and H_c (anisotropy field and coercive force), forms of static hysteresis loop, and dispersion parameter $\Delta 0.7$. The results indicated that the primary cause for

fluctuations on the transverse component of the magnetic flux upon cyclical switching of the thin films consists of the fluctuations involved in individual switching events, the volumes of local areas opposite directions, as well as fluctuations

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USSR

KURYUMOV, N. N., and POTECHKIN, V. V., et al., Fizika Metallov i Metallovedeniye, Vol 31, No 3, Mar 71, pp 663-664

in local portions of the film of values of critical fields at which switching occurs. Films with most nearly rectangular hysteresis loops have the best noise characteristics.

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USSR

UDC: 539.216.2.001.5:538

KURDYUMOV, N. N., POTEKIN, V. V.

"Spectra of Alternating Magnetization of Magnetic Thin Films"

Moscow, Radiotekhnika i Elektronika, Vol 16, No 1, Jan 71, pp 127-130

Abstract: A spectral study is made of signals resulting from the electromotive force of transverse induction in flat ferromagnetic films when they are subjected to alternating magnetization by homogeneous fields of harmonic form along the preferred axes. The experiments were done on 79 MNA Permalloy films 2000 Å thick made by vacuum vaporization. It was found that the spectral characteristics of the emf signals induced by the films are appreciably dependent on the conditions of magnetic reversal. When the amplitudes of the magnetizing field are less than the field of anisotropy of the film, the signal spectrum varies with a change in the direction of magnetic reversal. When magnetic reversal is parallel to the unfavorable axis of the film, the second harmonic of the magnetizing frequency predominates in the signal spectrum. When magnetization is along the preferred axis, there is either no signal, or a weak signal with

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USSR

KURDYUMOV, N. N., POTEMKIN, V. V., Radiotekhnika i Elektronika, Vol 16, No 1,
Jan 71, pp 127-130

a spectrum close to that of the magnetizing field. When the amplitudes of the magnetizing field exceed the field of anisotropy, the emf signals have spectra whose characteristics depend on the parameters of the magnetizing field. In this case, regardless of the direction of the magnetizing field, the signal spectra have an extremum envelope and consist of only odd harmonics of the magnetizing frequency. The signal spectra for magnetization along the preferred axis are considerably wider and of lower intensity than for the case of magnetization along the unfavorable axis. These relationships are explained on the basis of the anisotropic and dynamic properties of the films. In conclusion, the authors thank R. V. Telesnin and his colleagues for discussing the results.

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Nuclear Science and Technology

USSR

UDC: 539.12.08

DMITRIYEVSKIY, I. M., KABAKOV, Ya. I., FROLOV, V. V., POTEMLIN, Ye. L.

"Tissue Doses of High-Energy Nucleons (up to 30 GeV)"

Moscow, Atomnaya Energiya, Vol 32, No 6, Jun 72, pp 465-470

Abstract: At the present time there are almost no data on the dose characteristics of high-energy nucleons, which means that there are no scientifically based data on the maximum permissible fluxes for emission of this type. Existing computations are based on the Monte-Carlo method and have been done for nucleons with energies of less than 2 GeV. Extension of methods of this type to higher energies involves difficulties due to the lack of information on the differential characteristics of nuclear interaction between nucleons and the elements of biological tissue. A simple method is proposed in this paper for calculating the depth distribution of absorbed and equivalent doses of high-energy nucleons normally incident on a tissue-equivalent phantom in the form of a plate 30 cm thick with infinite transverse dimensions. The distribution function for shower particles on the phantom is found by a perturbation theory method, using

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USSR.

DMITRIYEVSKIY, I. M. et al., Atomnaya Energiya, Vol 32, No 6, Jun 72, pp
465-470

the angular and energy distributions of the shower particles in the Trilling formula. The averaged characteristics of nuclear interaction (average multiplicity of secondary particle production, average energy of excitation of residual nuclei, and so forth) are used for conversion from the distribution function found for the shower particles to dose distributions. This approach cuts down appreciably on the volume of computations and is justified in that existing theories of nuclear interaction and experiments give the most reliable data in just this case (i. e., averaged characteristics). Besides, the very concept of dose involves an averaged characteristic. Depth dose distributions are found for protons and neutrons with energies of 3, 5, 10, 20, and 30 GeV. The dose approximately doubles with an energy increase from 3 to 30 GeV. The results agree with calculations of other authors for energies up to 3 GeV.

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- 32 -

POTEMKINA, L.S.

J PRS 56499
14 JULY 72

83

STATE OF THE HUMAN GASTRIC SECRETORY FUNCTION WITH INTAKE OF AN ARTIFICIAL RATION

/Article by L. S. Potemkina, Moscow, Akademiya Nauk Voprosy Issledovaniya Moshchnoy i Psichofizicheskoy Biologii i Meditsiny (Current Problems in Space Biology and Medicine), Russian, 1971, p. 227

An artificial ration based on pure foods having a high assimilability despite a minimum weight and volume may be considered one of the possible ways for supplying food during a prolonged space flight. The development of such a ration must be based on the results of a physiologic and biochemical evaluation. The objective of our investigation was a study of the reaction of gastric glands in human subjects to a diet of an artificial nature (caloric content - 3,000 Cal) for 15 days. There was a tendency to a decrease in the mucus-forming function in the subjects and a depression of proteolytic and secretion of pepsinogen. This reaction of the secretory process in the stomach was probably associated with the peculiarities of the experimental ration; the use of casein as a protein source. It is known that casein is a protein with an unpolished configuration of molecules (M. P. Chernikov, T. V. Nikolskaya and Ye. Ya. Strel') and this affords a good possibility for its digestion by the proteolytic enzymes in the digestive system. The denaturation of casein is not accompanied by an increase in the rate of proteolysis, as is characteristic for ordinary globular proteins, but by its decrease.

1/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CYTOCHEMISTRY OF SUCCINATE OXIDOREDUCTASE IN SOME SECTIONS OF MICE
BRAINS DURING TOTAL X RAY IRRADIATION -U-
AUTHOR-(02)-PALASCHENKO, L.D., POTEMLINA, S.D.

P

COUNTRY OF INFO--USSR

SOURCE--RADIOBIOLOGIYA 1970, 10(1), 28-31

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--X RAY IRRADIATION BIOLOGIC EFFECT, BRAIN, ENZYME ACTIVITY,
NEURON, RADIATION SENSITIVITY, RADIATION SICKNESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0450

STEP NO--UR/0205/70/010/001/0028/0031

CIRC ACCESSION NO--AP0121124

UNCLASSIFIED

2/2 032 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--APO121124

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CYTOCHEMISTRY OF SUCCINATE OXIDOREDUCTASE WAS STUDIED IN MICE BRAINS 3 HR AND 3, 6 AND 12 DAYS AFTER WHOLE BODY X IRRADN. WITH A DOSE OF 600 R. MEDULLA OBLONGATA POSSESSED THE HIGHEST RADIOSensitivity; AN INITIAL ACTIVATION AND THEN SUBSEQUENT INHIBITION OF SUCCINATE OXIDOREDUCTASE ACTIVITY (BY A FACTOR OF 2.7 TWELVE DAYS AFTER IRRADN.) WAS OBSERVED. NEURONS OF THE CEREBELLUM SHOWED THE LOWEST RADIOSensitivity. CHANGES OF SUCCINATE OXIDOREDUCTASE ACTIVITY OBSERVED. AT VARIOUS TIME INTERVALS AFTER THE IRRADN. CORRESPONDED TO THE FEATURES OF RADIATION SICKNESS; AN INHIBITION OF THE ACTIVITY OCCURRED DURING THE LATENT PERIOD OF RADIATION SICKNESS.

FACILITY: VLADIVOSTOK. MED. INST., VLADIVOSTOK, USSR.

UNCLASSIFIED

1/2 027 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--FORMATION OF STRUCTURE DURING THE ROLLING AND ANNEALING OF CAST
CRYSTALS OF TRANSFORMER STEEL -U-
AUTHOR-(104)-MULOTILOV, B.V., POTEMLINA, V.E., SAMARINA, N.M.,
CHERVONENKOV, V.A.
COUNTRY OF INFO--USSR

SOURCE--IZV. AKADEMII NAUK SSSR, SER. FIZ. 1970, 34(2), 245-8

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PHYSICS

TOPIC TAGS--TRANSFORMER STEEL, ANNEALING, METAL SINGLE CRYSTAL, IRON
ALLOY, COLD ROLLING, HOT ROLLING, CRYSTAL DISLOCATION, METAL TEXTURE,
CRYSTAL GROWING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1995/0167

STEP NU--UR/0048/70/034/002/0245/0248

CIRC ACCESSION NU--AP0115891

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NU--AP0115891

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SINGLE CRYSTALS OF SILICIDED FE WERE GROWN FROM THE MELT BY CZOCHRALSKI'S METHOD. SAMPLES FOR HOT AND COLD ROLLING WERE CUT FROM THE CRYSTALS. THE STUDY OF THE (110) (001) CRYSTALS AFTER COLD ROLLING WITH 5PERCENT DEFORMATION SHOWED THAT THE PLASTIC STRAIN OCCURS BY TWINNING AND SLIP. AFTER 80PERCENT STRAIN BANDS WITH AN ELEVATED DISLOCATION D. APPEAR VISIBLE IN THE STRUCTURE. THE TEXTURE OF HOT ROLLED CRYSTALS DEPENDS ON THE TEMP. OF ROLLING AND THE DEGREE OF DEFORMATION. BY SUITABLY CHOOSING THE ROLLING CONDITIONS THE INITIAL ORIENTATION OF THE SINGLE CRYSTALS CAN BE PRESERVED DURING HOT ROLLING.

FACILITY: TSNIICHM IM. BARDINA, MOSCOW, USSR.

UNCLASSIFIED

1/2 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

TITLE--AQUEOUS SYSTEMS OF SODIUM L GLUTAMATE, IRON II CHLORIDE, AND
MANGANESE CHLORIDE -U-

AUTHOR--(04)-UMETALIYEVA, S.K., BAKASOVA, Z.B., PTEMKO, L.I., DRUZHININ,
T.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHM. 1970, 15(3), 801-5

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--REFRACTIVE INDEX, ORGANOSODIUM COMPOUND, IRON COMPOUND,
MANGANESE COMPOUND, CHLORIDE, SOLUBILITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1147

STEP NO--UR/0078/70/015/003/0801/0805

CIRC ACCESSION NO--AP0136567

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0136567

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REACTION OF NA L GLUTAMATE (I) WITH FECL SUB2 AND MNCL SUB2 GIVES FE AND MN L GLUTAMATES (II AND III, RESP.). II AND III ARE INCONGRUENTLY SOL. IN WATER, THEIR SOLY. IS HIGHER THAN THAT OF THE PARENT ACID. REFRACTIVE INDEXES, N SUBALPHA AND N SUBALPHA, OF II ARE 1.99 AND 1.960 AND OF III ARE 1.980 AND 1.953, RESP. SOLY. ISOTHERMS OF I-FECL SUB2-H SUB2 O AND I-MNCL SUB2-H SUB2 O AT 25DEGREES ARE CONSTRUCTED. COMPNS. OF EQUIL. SOLNS. OF THE SYSTEMS ARE TABULATED.

UNCLASSIFIED

USSR

UDC: 539.163.546.663
4

VYLOV, Ts., GROMOV, K. Ya., GROMOVA, I. I., ISKHAKOV, G. I., KUZNETSOV,
V. V., KUZNETSOVA, M. Ya., POTEMLA, A. V., FOMINYKH, M. I.

"Investigation of the Decay of ^{148}Tb and ^{150}Tb . Part II. $\gamma\gamma$ -Coincidence.
Decay Schemes of ^{148}Tb and ^{150}Tb "

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol. 37, No 1,
Jan 73, pp 48-52

Abstract: The paper presents studies of $\gamma\gamma$ -coincidence spectra of terbium isotopes ^{148}Tb and ^{150}Tb with their decay schemes and a comparison of the analogous excited states of ^{148}Gd and ^{150}Gd nuclei and the neighboring nuclei of samarium and neodymium. If it is assumed that the odd 65-th proton and 83-d (85-th) neutron in the nuclei of ^{148}Tb and ^{150}Tb are on shells $d_{5/2}$ and $f_{7/2}$, respectively, then according to the shell model the ground state of ^{150}Tb has the configuration $\{\text{p}(\text{d}_{5/2})^1\text{n}(\text{f}_{7/2})^3\}$, while that of ^{148}Tb is $\{\text{p}(\text{d}_{5/2})^1\text{n}(\text{f}_{7/2})^1\}$. These configurations allow values of the I^π -ground states of these isotopes of 5^- , 4^- , 3^- , and 2^- . From the decay schemes of these nuclei and the values of $\log ft$, it may be concluded that the spin and parity of the ground states of these isotopes must be 2^- .

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POTEPALOV, V.P.

JPR 59063
6-73

VII-11. THERMAL DECOMPOSITION OF TRIMETHYL GALLIUM IN INERT GAS AND HYDROGEN FLOWS

[Article by H.-M. Korenshuk, Ye. Ya. Grinberg, L. N. Molodov, V. P. Potepalov, Katush Novosibirsk, I.M. Simonov and Protasov, N. N. Sintsov. Poluprovodniki, No. 9, 1972, p. 99]

At the present time a prospective method for obtaining film of AlInN_x compounds is the use of organometallic compounds and hydrides. Therefore, the decomposition of these compounds in various gas carriers is of interest. In this paper results are presented from a study of the thermal decomposition of trimethyl Gallium (TMC) in helium and hydrogen flows.

The method of gas chromatography was used to determine the products of pyrolysis of TMC.

It was found that the basic components of the gaseous decomposition product of $\text{In}(\text{CH}_3)_3$ in the helium flow in the temperature range of 400 to 700°C are ethane, ethylene and propane. When studying the thermal decomposition of TMC in the hydrogen flow in the same temperature range, the presence of only molecular methane was established.

The results of this paper permit a conclusion to be drawn regarding the selection of the TMC gas carrier to obtain AlInN_x epitaxial film.

USSR

UDC 62-525 : 681.3-182

VASIL'YEVA, V. V., POTEPALOV, YU. N., and SUVOROVA, S. V., National All-Union
Central Scientific Research Institute of Integrated Automation

"Pneumatic Logic Unit"

USSR Authors' Certificate No 337774, Cl. G 06d 1/04, filed 22 Jun 70, published 5 May 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 15, 5 May 72, p 177)

Abstract: The device contains one output and two input channels; one output and two input single-membrane elements with a closed and a flow-through chamber in each; a throttle for discharge into the atmosphere, connected to the closed chamber of the output element; and a feed throttle connected to the output channel of the unit and the spring-actuated flow-through chamber of the output element. It is unique in that, in order to simplify the design, the input channels are cross-connected to the flow-through chamber of one input element and the spring-actuated closed chamber of the other input element, and the nozzles of the flow-through chambers of the input elements are connected to the closed chamber of the output element.

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-5 -

USSR

UDC: None

POTEPALOV, YU. N.

"Pneumatic Computer"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki,
No 37, 1973, p 187, 397918

Translation: A device containing a pressure-to-flow converter and a flow-to-pressure converter is distinguished in that, with the purpose of increasing the accuracy, the output channel of the pressure-to-flow converter is connected with the flow-to-pressure converter through a flow repeater.

The device above is distinguished in that the flow repeater is composed of three single-membrane elements, each of which contains a flow-through chamber appear in the first and second elements, and in the third element there is a dead-end chamber; the input channel of the repeater is connected to the dead-end chamber of the third element directly and through a throttle to the atmosphere; the feed channel is connected to the dead-end chamber of the second element directly and with the flow-through chamber of this same element through a throttle; the output channel of the repeater is connected to the nozzles of the second and third elements, while the nozzle of the first element is connected to the dead-end chamber of the third element directly and is connected with its feed channel through a throttle.

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USSR

UDC 621.646.4

BIRMAN, A. I., ZAKATOV, V. P., KOLOYDENKO, A. L., MASHBITS, A. V., and
POTEPALOV, Yu. N., Central Scientific Research Institute of Large-Scale
Automation and Special Design Office for Automation in Petroleum Refining
and the Petrochemical Industry

"Pneumatic Long-Term Memory Device"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki,
No 28, 1971, p 199

Abstract: USSR Authors' Certificate No 315183 (Cl. G 06g 5/00), filed
4 January 1970, issued 21 September 1971, covers a pneumatic long-term
memory device containing an oscillator and a cathode follower and two
pulsating capacitances with a control and a working cavity in each, con-
nected to the oscillator through contacts. In order to reduce temperature
error, the control cavities of the capacitances, filled with a liquid with
a low coefficient of temperature expansion, are interconnected through a
contact; the working cavity of one capacitance is connected with the
cathode follower input and with input and reference pressure sources through
contacts; and the working cavity of the second capacitance is connected via
contacts to the reference pressure source and the atmosphere.

1/1

POTESHNOVA, L.I.

JPR 5 592 68
6-73

3

VII-2b. SPONTANEOUS CRYSTALLIZATION IN GADOL EPITAXY

[Article by V. M. Andreyev, A. V. Myasnikov, L. I. Poteshnova, Moscow; Novosibirsk, Fizmat, Nauka, 1977 June, 1972, p. 88]

A study was made of the conditions of spontaneous crystallization [1] of Gado from the gas phase in nonorienting parts of the reaction chamber surface. It is demonstrated that the front and the density of the polycrystalline deposit depend on the partial pressure of AsCl₃, the temperature gradient, the flow rate above the substrates, the type and the state of the surface.

It was established that the inclination toward spontaneous crystallization decreases in the following material series: Ground quartz, sapphire, Si,

Layers in connection with the morphological characteristics of the epitaxial. An explanation of these relations is given from the point of view of the degree of preliminary association according to [2].

A study was made of the density and distribution of the dislocations in the (100) plane grown under optimal conditions on small dislocation substrates of Gado alloyed with Fe.

As a result of the study, the growth conditions of the perfect layers of Gado free of pyramids and growth holes are defined.

BIBLIOGRAPHY

1. Z. A. Kusnetsov, G. A. Kalowit, Poluprovodniki (Growth Processes of Crystals and Films of Semiconductors), Naukova Dumka, Kiev, 1970.
2. S. A. Streltsev, Prosesy rosta kristallov i plenok poluprovodnikov, Novosibirsk, 650, 1970.

USSR

POTETENKO, O. V.

UDC 532.5:621.22

"On the Possibility of Applying Electrodynanic Analogies in Studying Three-Dimensional Cascades of Blade System Profiles"

Gidravl. mashiny. Resp. mezhved. temat. nauch.-tekhn. sb. (Hydraulic Machines. Republic Interdepartmental Thematic Scientific-Technical Collection), 1972, No. 6, pp 41-47 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3B733)

Translation: The essential problems of modeling and various versions in the use of electrical models are discussed for the case of flow over cascades of profiles located on curved surfaces of the current in a layer of variable thickness. The flow is considered nonviscous and incompressible. Author's abstract.

1/1

Acc. Nr
Af0037003

P
Ref. Code: UR 0239

PRIMARY SOURCE: Fiziologicheskiy Zhurnal SSSR, 1970, Vol. 56,
Nr 2, pp 159-164

EFFECT OF LESIONS IN THE HYPOTHALAMIC POSTERIOR NUCLEI ON
THE THYROTROPIC AND EXOPHTHALMIC HYPOPHYSEAL ACTIVITY
IN RABBITS

Korneva, Ye. A.; Potin, V. V.

Lab. of Comp. Physiology, Institute for Experimental Medicine, Acad. Med. Sci. USSR,
and Dept. of Endocrinology, Institut of Obstetrics and Gynecology, Acad. Med. Sci. USSR,
Leningrad

Lesions in the hypothalamic posterior nucleus were shown to significantly diminish
the exophthalmic activity and not to affect the thyrotropic that.

Local lesions in other hypothalamic posterior structures did not affect either exopht-
thalmic or thyrotropic hypophyseal activity.

The hypothalamic posterior nucleus is known to influence the antibody formation.
Apparently, changes of the exophthalmic factor secretory level is one of the ways of that
influence.

D.K.

2

REEL/FRAME
19721935

1/2 ~ 013

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--LEUCO 1,4,5,8 TETRAHYDROXYANTHRAQUINONE -U-

AUTHOR--(05)--BELKIN, I.D., BRIGIDER, YU.Z., MASLOSH, V.Z., SANKO, L.G.,
POTIRAY, R.YE.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 266,777

REFERENCE--UTKRYTIYA, IZUBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, CHEMICAL SYNTHESIS, ANTHRAQUINONE, NITRATION,
HYDROXYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1810

STEP NO--UR/0482/70/000/000/0000

CIRC ACCESSION NO--AA0132076

UNCLASSIFIED

2/2 013
CIRC ACCESSION NO--AA0132076

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LEUCO 1,4,5,8
TETRAHYDROXYANTHRAQUINONE (I) WAS PREPD. FROM 1,8 DIHYDROXYANTHRAQUINONE
BY NITRATION, REDN. OF THE RESULTANT NITRO DERIV. WITH NA SUB2 S IN THE
PRESENCE OF NA SUB2 S SUB2 G SUB4.2H SUB2 U; FILTRATION, RINSING,
HYDROLYSIS IN THE PRESENCE OF AQ. NAOH AND NA SUB2 S SUB2 O SUB4.2H SUB2
O, AND SEPN. OF I.

UNCLASSIFIED

USSR

VIX 632.95

PIL'MENSHTEYN, I. D., BEZUGLYY, S. F., ROMANOVA, A. I., POTOLOVSKIY, L. A., and GRUZDEV, B. V.

"A New Emulsifier for Pesticides - Calcium Dodecylbenzolsulfonate Derived from Tetrameric Propylene"

V sb. Khim. sredstva zashchity rast. (Chemical Protection of Plants -- collection of works), No 2, Moscow, 1972, pp 145-150 (from RZh-Khimiya, No 22, 25 Nov 73, Abstract No 22N517 by I. Pil'menshteyn)

Translation: Calcium dodecylbenzolsulfonate (I) synthesized in the All-Union Sci-Res Institute of Petroleum Products derived from tetrameric propylene reduces the consumption of OP-7 [a wetting agent of the alkyl phenol-ethylene oxide type] 3- to 4-fold in emulsifying concentrations of pesticides. Introduction of I into the latter greatly improves their emulsifiability due to decreased interphasial tension at the water-oil boundary.

1/1

APPROVED FOR RELEASE: 08/09/2001

CIA-RDP86-00513R002202520012-

IL RON 6
SCHENK SCHAFFIOS

UDC: 612.766.2.014.40-

THE EFFECT OF AN ALTERED GAS ENVIRONMENT ON ANIMALS
A. I. Physiologist, Ye. V. Lomakin, Ye. V. Logonova, N. Ye. Mal'kin, A. V. Voloshin, Ye. N. Meditsinskaya,
Institute of Experimental Endocrinology, Moscow, USSR,
S. N. Sushchikina, N. B. Maksimova, N. B. Shabotova,
Institute of Endocrinology, Moscow, USSR,
N. G. Kostyleva, Institute of Endocrinology, Moscow, USSR,
No. 9, 1971, pp. 78-83.

In the course of investigating the clinical syndromes which form when disturbances in the conception of a hypodynamic syndrome which diminish the organism are characterized by specific functional disturbances (A. R. Kotovskaya et al., 1964; I. I. Karakir et al., 1966; Miller and Levato, 1966),

researchers (V.B. Markin et al.; P.V. Vankov et al.) have shown the effectiveness of using ultrasonic methods for the selective retention of microorganisms.

These articles are now called serious environmental effects, staying there for a long time, and their studies established that increasing altitude, such as a rapid increase or decrease, from sea level to 10,000 feet, causes a temporary decrease in oxygen saturation of the blood, and a corresponding decrease in oxygen saturation of the body tissues. This is due to the fact that at higher altitudes, the air is thinner, and therefore contains less oxygen. The result is that the body has to work harder to get enough oxygen, which leads to fatigue and other symptoms. The most common symptom is shortness of breath, especially when walking or exercising. Other symptoms may include headache, dizziness, nausea, and vomiting. In severe cases, there can be a loss of consciousness. The severity of the symptoms depends on the individual's physical condition and the rate of ascent. It is important to note that the symptoms are not necessarily permanent, and can be relieved by returning to a lower altitude.

The purpose of the present experiments was to study the distribution of various kinds of environment receptors as a means of eliciting myopolydactic syndrome.

Methods. The investigations were conducted in four series of experiments. The distribution of SGO material, albino male rats, weighing 120 to 260 grams, under experimental conditions are shown in Table 1.

USSR

UDC 621.365.82

POTONENKO, V. T.

"Gas Dynamic Lasers with Closed Cycles and Photon Turbines"

Nauch. tr In-t mekh. Mosk. Un-ta (Scientific Proceedings of the Institute of Mechanics, Moscow University), No 21, 1973, pp 119 - 122, RZh-Fizika, No 9, Sep 73, Abstract No 9D762

Translation: Evaluations are given of the efficiency of a gas dynamic laser using CO₂ with a closed cycle. An open mode of operation (photon turbine) is also described, in which the energy of laser radiation is transformed into mechanical work. It is noted that although the theoretical efficiency of such devices can be 100%, the practical achievement of high efficiency is quite complex. It is shown that high efficiency in transforming light energy to mechanical work can be achieved also by using the radiation to heat a gas in a heat machine, since the effective temperature of laser radiation is very high.

V. B. Khalfin

1/1

- 25 -

USSR

UDC 621.165.013

GOKHSTEYN, D.P., TAUBMAN, YE. I., and POTONTSEV, V.G.

"Effect of the Working Fluid on the Thermodynamic Effectiveness of the Rankine Cycle"

Energ. Mashinostroyeniye. Resp. Mezhved. Temat. Nauch.-Tekhn. Sb. /Power Machinebuilding. Republic Interdepartmental Thematic Scientific-Technical Collection/, 1972, Vol 14, pp 70-73 (from Referativnyy Zhurnal, No 9, Sep 72. 49. Turbostroyeniye. Single Issue. Abstract No 9.49.12)

Translation: The thermal efficiency dependence of the cycle on the parameter characterizing the properties of the working fluid is analyzed. The efficiency gain of different working fluids is evaluated (Hg, K, Na, H₂O, NH₃, Cl₂, F-30, F-21) and also the maximum range of the thermal efficiency change of the Rankine Cycle at the expense of changing properties of the working fluid. Two illustr., seven bibliog. refs.

1/1

hq -

USSR

UDC [537.226 + 537.311.33] : [537 + 535]

GOLCVEY, M. I., PERESH, Ye. Yu., LADA, A. V., ~~POTORIV, M. V.~~

"Some Electrophysical Characteristics of Metathiobismutite and
Metaselenobismutite of the Alkali Metals"

Uzhgorod, V sb. Nekotor. vopr. khimii i fiz. poluprovodnikov
slozhn. sostava (Some Problems of the Chemistry and Physics of
Complex Semiconductors -- collection of works), 1970, pp 150-
157 (from RZh-Fizika, No 11, 1971, Abstract No 11E952)

Translation: $X\text{BiSe}_2$ and YBiS_2 where X is Na, K, Rb, Cs; and Y
is Li, Na, K, Rb, Cs are synthesized. Aquadag or Pt contacts
are applied for measuring the electrical conductivity σ and the
thermal emf α of the specimens. All synthesized materials are
impure p-semiconductors. The thermal activation energy found in
the natural conductance region increases with increasing ion
radius of the alkali metals. The growth in α is apparently the
result of the increase in mobility of the charge carriers. With
the attainment of the natural conductivity temperature, α begins
to fall off.

1/1

1/2 008

UNCLASSIFIED

PROCESSING DATE--11SEP70

TITLE--ON THE METHOD OF CHEMICAL ANALYSIS OF SILICATES -U-

AUTHOR--GALIBIN, V.A., POTOTSKAYA, V.

COUNTRY OF INFO--USSR

SOURCE--VESTNIK LENINGRADSKOGO UNIVERSITETA, NO 6, GEOLOGIYA, GEOGRAFIYA,
1970, NR 1, PP 160-163

DATE PUBLISHED-----70

P

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SILICATE, SPECTROMETRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/1275

STEP NO--UR/0307/70/009/001/0160/0163

CIRC ACCESSION NO--AP0106056

UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0106056

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE IS DEVOTED TO THE ANALYSIS OF SILICATE ROCKS AND MINERALS BY A COMBINED CHEMICAL SPECTROCHEMICAL AND FLAME SPECTROMETRIC METHOD. SiO_2 , FeO , H_2O PLUS, H_2O MINUS, P_2O_5 ARE ANALYSED BY THE RAPID CHEMICAL METHOD. Al_2O_3 , Fe_2O_3 (TOTAL), TiO_2 , MnO , MgO , CaO ARE DETERMINATED BY THE SPECTROCHEMICAL METHOD. Na_2O , K_2O , Li_2O , Rb_2O , Cs_2O ARE ANALYSED BY THE FLAME SPECTROMETRIC METHOD. THE CHEMICAL AND SPECTROCHEMICAL ANALYSIS ACCURACY IS COMPARED.

UNCLASSIFIED

Acc. Nr: APO047336

Ref. Code: UR0206

PRIMARY SOURCE: *Vestnik Dermatologii i Venerologii*, 1970,
Nr 1 . pp 14-19

AUTOIMMUNOLOGICAL REACTIONS IN PSORIASIS

I. I. Pototskiy, V. A. Grebennikov

Summary

In 100 patients with psoriasis autoantibodies to the normal human skin and to their own apparently normal skin were detected. For determination of antibodies to the normal human skin, precipitation test with double diffusion in agar according to the method of Oakley and Fulthorne, and leucocyte agglomeration test by the method of Fleck were used. The authors used 10% antigen from normal human skin. Serum antibodies to the skin antigen were found by means of agar precipitation test in 46 ($46 \pm 5\%$) patients. The greatest number of positive (26) and markedly positive (++++) precipitation tests (4) with the skin antigen was found in progressive and stationary stages. Positive intracutaneous tests with autoantiserum were obtained in 41 ($59 \pm 5.9\%$) patients. Positive leucocyte agglomeration test was observed in 24 ($30 \pm 5\%$) patients. Fixed on leucocytes autoantibodies for the skin developed more frequently in psoriatic arthritis and disseminated forms of psoriasis. Immunological studies in psoriasis revealed an important role of autoallergic processes in the pathogenesis of this disease.

REEL/FRAME
13790860

DZ 2

USSR

UDC: none

BAYDAKOV, M. P., PASTUKHOV, O. V., POTOTSKIY, V. K.

"On the Probability of Distinguishing Images Without a Fixed Location"

Tr. Leningr. in-t aviats. priborostr. (Works of the Leningrad Institute of Aviation Instrument Building), 1971, vyp. 69, pp 38-42 (from PZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G2)

Translation: The paper deals with the problem of distinguishing images against a background of a noise field in the case where the location of the image is not precisely known. Formulas are presented for evaluating the probability of distinguishing images without a fixed position. Resumé.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--EFFECT OF IODOBROMINE WATERS ON RESTORATION OF THE FUNCTIONAL STATE
OF THE SKIN IN PSORIASIS -U-
AUTHOR-(02)-PUTOTSKIY, I.I., ZORIN, P.M.

P

COUNTRY OF INFO--USSR

SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 123-125

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--WATER, IODINE, BROMINE, SKIN DISEASE, PROPHYLAXIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3002/1715

STEP NO--UR/0475/70/000/005/0123/0125

CIRC ACCESSION NO--AP0129083

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129083

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY IS PRESENTED OF 116 PATIENTS WITH PSORIASIS WHICH WERE TREATED WITH IODOBROMINE MINERAL WATERS (15 BATHS PER COURSE). IT WAS FOUND THAT THESE BALNEOPROCEDURES FAVORED NORMALIZATION OF REACTIVITY OF THE ORGANISM. FACILITY: KAFEDRA DERMATOLOGII, KIYEVSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 621.374.33

PASHKOVA, T. M., LITVINNOVA, A. R., FOTROSOV, V. V., and EKSLER, A. A.

"Classification and Comparative Analysis of Threshold Units Based on Semiconductor Devices"

V sb. Tunnel'n. diody v vychisl. i izmerit. tekhn. (Tunnel Diodes in Computer and Measurement Technology -- collection of works), Riga, "Zinatne", 1972, pp 15-36 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 G181)

Translation: Existing types of classification are studied. The authors propose a new type of classification and conduct analysis of threshold units based on semiconductor devices. A prospective group of threshold units is singled out which is based on tunnel diodes and methods are given for expanding the application of tunnel diodes in threshold units. Original article: seven bibliographic entries.
Resume.

1/1

USSR

UDC 537.521

ABRAMOV, I. S., POTSAR, A.

"Study of Dynamic Arcbacks in Sectioned Gas-Discharge Rectifiers With Heated Cathode"

Izv. Leningr. elektrotekhn. in-ta (Bulletin of the Leningrad Electrical Engineering Institute), 1970, Issue 94, pp 73-75 (from RZh-Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A159)

Translation: It is determined that for high-voltage rectifiers with a heated cathode during an increase of current through the device, an increase of reverse voltage, or during a decrease of the delay time between termination of the current and the applied reverse voltage, a brightly expressed threshold character of the arcbacks' appearance is observed. The probability of the appearance of arcback is changed by degrees from zero to units during attainment of some threshold value by one of the factors considered. The characteristics obtained for recovery of the stability of devices of a given type makes possible an evaluation of the deionization qualities of the devices and the effect on their construction of specific units. V. M.

1/1

USSR

UDC 621.52: 531.788.7

LEDOVSKOY, V.P., POTSAR, A.A.

"Widening Of The Measurement Range Of A Relaxation Electric-Discharge Gage"

Izv. Leningr. elektrotekhn. in-ta (Bulletin Of The Leningrad Electrical Engineering Institute), Vyp 83, pp 120-123 (from RZh-Elektronika i yeye primeneniye, No 6, June 1970, Abstract No 6A-57)

Translation: A comparative analysis of various methods to decrease the delay time of triggering shows that during development of a highly-stable electric-discharge gage the greatest effect is attained by exposure of the discharge cathode. The optimum method is the creation in the immediate vicinity of the basic discharge space of an auxiliary discharge, contributing to the increase of concentration of the charged particles in volume and an increase of the initial photocurrent from the basic cathode. The effect of increasing the upper limit of the measurable pressure with preservation of the lower boundary is accomplished by the creation of a nonuniform field in the interval. In a gage with an anode-cathode spacing equal to 4 mm, the upper boundary of the operating band (100 mm of mercury) corresponds to a voltage of the source of 2000 v. In order to assure the same upper boundary of measurements in a gage of plane-parallel construction, the voltage of the power supply must amount to 3000 v. Introduction of an auxiliary discharge makes it possible to decrease the mean square error of the period of the oscillations at the output of the gage to 0.7-0.4 percent in all the operating band. With the removal of the statistical delay of

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USSR

LEEDOVSKY, V.P. et al. Izv. Leningr. elektrotekhn. in-ta, Vyp 83, pp 120-123

triggering, the upper boundary pressure of the gage is determined by the voltage of the power supply and the configuration of the electrodes. Use of a nonuniform field makes it possible to expand the range of measurements with conservation of the magnitude of the voltage of the power supply. 4 ref. A. F.

2/2

- 34 -

USSR

POTTOBIN, I. V.

"Operational Systems of Collective Use"

Sistemnoye i teor. programmirovaniye [Systems and Programming Theory -- Collection of Works], Novosibirsk, 1972, pp 100-109 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V636 by the author)

Translation: Certain aspects of operational systems for collective use are studied: servicing modes, organization of processes and files. In connection with the aspects discussed, the experience of development of the operational system for the AIST-0 is analyzed. Based on these aspects, an attempt is made to draw a boundary between the nucleus (the operational system itself) and its surroundings (systems programs) in collective-use systems.

1/1

USSR

POTTOSEN, I. V.

"Linearization of a Program and its Partial Ordering"

Sistemnoye i Teor. Programmirovaniye [Systems and Theoretical Programming -- Collection of Works], Novosibirsk, 1972, pp 278-286 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V662, by the author).

Translation: Definitions are given for hammocks and linear components of a program control graph. The concepts of such operations on programs as linearization, arranging and determination of operator frequency are introduced. The structures and operations introduced can be used for program optimization.

1/1

USSR

BEZHANOVA, M. M., KATKOV, V. L., POTTOSIN, I. V.

"Works on Analytic Transforms at the Computer Center, Siberian Affiliate, Academy of Sciences USSR"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 18-20 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V646, by the authors).

Translation: This work is a review of systems for digital computer analytic transforms studied at the Computer Center, Siberian Affiliate, Academy of Sciences, USSR. The programming systems studied include DEFPROTSESSOR, ANALITIK, KINO and PASSIV.

1/1

USSR

UDC 577.4

POTTOBIN, YU. V.

"Statistical Properties of the Compatibility of States of a Digital Automaton"

Tr. Sib. fiz.-tekhn. in-ta Tomsk un-te (Works of the Siberian Physical-Technical Institute under Tomsk University), 1971, vyp. 62, pp 33-37 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V349)

No abstract

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USSR

UDC 577.4

POTTOBIN, YU. V.

"Statistical Estimate of the Efficiency of Some Algorithms for Minimizing the Number of States of a Digital Automaton"

Tr. Sib. fiz.-tekhn. in-ta pri Tomsk. un-te (Works of the Siberian Physical-Technical Institute under Tomsk University), 1971, vyp. 62, pp 20-32 (from RZh-Kibernetika, No 7, Jul 72, Abstract No 7V350)

No abstract

1/1

- 13 -

USSR

UDC: 577.4

ZAKREVSKIY, A. D., POTTOSIN, Yu. V., ROTKO, V. F., TOROPOV, N. R., YAN-KOVSKIY, A. Ye.

"Systems and Programs for Synthesizing Discrete Devices. A System for Automatic Synthesis of Discrete Automata"

Inform. materialy. Nauch. sovet po kompleks. probl. "Kibernetika" AN SSSR
(Informational Materials. Scientific Council on the Complex Problem of Cybernetics, Academy of Sciences of the USSR), 1971, No 7(54) pp 42-62
(from RZh-Kibernetika, No 5, May 72, Abstract No 5V327)

[No abstract]

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POTOSINA

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(24)

TECHNICAL TRANSLATION

Ref# ESTC.U7.23.2015-72
JUL 12

ENGLISH TITLE: PROBLEMS OF LASER BEAM DATA TRANSMISSION:
PROCEEDINGS OF THE FIRST ALL-UNION CONFERENCE, KIEV,
SEPTEMBER 1968

FOREIGN TITLE: PROBLEMI PEREDACHII INFORMATSII LAZERNYX IZLIVORENII

AUTHOR: I. A. DERVUGIN, ET AL.

SOURCE: KIEV ORDER OF LENIN STATE UNIVERSITY
IMENI T.G. SCHUYCHENKO

Translated for ESTC by ACSL

NOTICE

The contents of this publication have been translated as presented in the original text. No attempt has been made to verify the accuracy of any statement contained herein. This translation is published with a minimum of copy editing and graphics preparation in order to expedite the dissemination of information.

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- 1st Pg -

Acc. Nr:
AP0046171

Abstracting Service: 5/70 Ref. Code:
INTERNAT. AEROSPACE ABST. UR 0198

A70-23286 # Contribution to the theory of shells of revolution with variable moduli (K teorii raznomodul'nykh obolochek vrashcheniya). O. V. Ponomarenko and L. A. Tolokonnikov (Tul'skii Politekhnicheskii Institut, Tula, USSR). Prikladnaya Mekhanika, vol. 6, Jan. 1970, p. 22-26. 6 refs. In Russian.

Theoretical investigation of the stress distribution in shells of revolution with variable elastic moduli, assuming a continuous dependence of the rigidity of the material and the state of strain. Stress and displacement functions are obtained in the form of power series in a small parameter characterizing the variability of the moduli of elasticity. Zero-order and first-order terms of the series are taken into account. An approximate two-dimensional representation of the three-dimensional problem is obtained by an asymptotic expansion. V.P.

ALS

REEL/FRAME
19781248

18

USSR

UDC 539.3.01

POTUDIN, O. V., TOLOKONNIKOV, L. A.

"Concerning the Three-Dimensional Problem of the Elasticity Theory of Materials of Different Moduli"

V sb. Raschet prostranstv. sistem v stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics — Collection of Works), Saratov, Saratov University, 1972, pp 55-58 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V16)

Translation: The solution of a system of equations of the axisymmetric theory of elasticity for bodies of materials of various moduli is constructed. The characteristics of the stressed state of a short continuous cylinder of a material of varying modulus loaded at the end surface with a piecewise-linear load is given as an example. V. S. Vol'pert.

1/1

USSR

P

UDC 539.3

POTUDIN, O. V. and TOLOKONNIKOV, L. A. (Tula)

"On the Theory of Heteromodular Shells of Revolution"

Kiev, An UkrSSR, Prikladnaya mekhanika, Vol 6, No 1, 1970, pp 22-26

Abstract: Relationships of heteromodular shell theory are used in studying the stress distribution in a shell of revolution made of a material with different elasticity moduli in tension and compression, and subjected to axisymmetrical uniform loading with moments and forces acting at the shell's face edges. It is assumed that the dependence of shell-material rigidity on deformation is described by a continuous function. The stress and displacement functions are given in form of expansions in series in powers of a small heteromodularity parameter taking into account the terms of the zero and first powers. An asymptotic expansion is used in reducing the three-dimensional problem to its approximate two-dimensional description. Some results of numerical stress analysis in a thin heteromodular shell are given in a table showing the effect of the heteromodularity of the shell's material on the stress distribution. Orig. art. has: 1 table, 19 formulas and 6 references.

1/1

- 118 -

1/2 019 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--STRUCTURAL EFFECTS OF A NUCLEAR SURFACE IN LOW ANGLE NEUTRON

SCATTERING -U-

AUTHOR-(02)-POTUPA, A.S., TRETYAKOV, V.N.

COUNTRY OF INFO--USSR *P*

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87-94

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--SMALL ANGLE SCATTERING, NEUTRON SCATTERING, NUCLEAR STRUCTURE,
ANISOTROPY, NUCLEAR MODEL

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PROCESSING DATE--16OCT70

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ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A THEORETICAL MODEL WHICH ALLOWS FOR THE N STRUCTURE OF THE NUCLEAR SURFACE GIVES CONSISTENT SEMI QUANT. EXPRESSIONS FOR THE ANOMALOUS ANISOTROPY IN N NUCLEAR SCATTERING. THE MODEL IS CONSISTENT WITH OBSERVED DEVIATIONS; IT EXPLAINS THE NEG. RESULTS OF EXPTS. ON ANOMALOUS ANISOTROPY IN SCATTERING ON NUCLEI OF CU, IN, SN, W, AND BI, AND ALLOWS ONE TO PREDICT THE EFFECT ON NUCLEI OF CD, XE, ND, SM, GD, DY, HF, AND PT. FACILITY: INST. FIZ., MINSK, USSR.

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USSR

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UDC 539.12.01+125.5+173.4

POTUPA, A. S., TRET'YAKOV, V. N.

"Effects of the Structured Nature of the Nuclear Surface in Small-Angle Neutron Scattering"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Matematicheskikh Nauk, No 1, 1970, pp 87-94

Abstract: The present paper demonstrates that within the framework of the dispersion approach and under certain rational assumptions, consideration of the nucleon structure of the nuclear surface gives a consistent semiquantitative description of anomalous anisotropy in neutron-nuclear scattering. Certain problems of the relation of the optical-potential and diagrammatic approaches and also the special role of the delta diagram, the contribution of which to the investigated process is also evaluated, are discussed. Arguments are presented in favor of "partial complementation" of the delta diagram, and basic conclusions from a simulation of the process are presented.

A model is proposed which considers the effect of direct surface processes the contribution of which is approximated by the delta diagram. Within
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POTUPA, A. S., TRET'YAKOV, V. N. Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Matematicheskikh Nauk, No 1, 1970, pp 87-94

the framework of this scheme, satisfactory semiquantitative agreement with experimentation is obtained. It is pointed out that the proposed approach does not fix the limit of fissionable and nonfissionable nuclei (which corresponds to the experimental situation: the effect was observed not only in U, Th, and Pu, but also in Pb). The criteria for selecting the nuclei convenient in studying anomalous anisotropy were the magnitude of the imaginary part of the scattering amplitude in the small-angle range and also the position of the singularity during scattering in each isotope of the mixture and its abundance. A table of characteristics of elements ($A \geq 63$) essential for neutron-nuclear scattering is presented. This table permits us to understand how the heavy target nuclei are isolated, and it explains the negative results of the experiments with respect to detecting anomalous anisotropy in scattering in Cu, In, Sn, W, and Bi nuclei and predicting the possibility of observing the effect in Cd, Xe, Nd, Sm, Gd, Dy, Hf, and Pg nuclei. From the model it is definitely concluded that the magnitude of the effect increases with energy. This is also confirmed by the experiments. The possibility of observing the effect is connected with satisfaction of the condition $\Delta\sigma/\delta\sigma > 1$ ($\delta\sigma$ is the experimental error). Inasmuch as the variation of increase is $\delta\sigma$ with energy is unknown, it is difficult to predict the energy range most convenient for study.

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USSR

UDC 539.67

ROZOVSKIY, M. I., POTURAYEV, V. N., KRUSH, I. I., and SHAKALOVA, O. I.

"On the Influence of Relaxation Characteristics on Deformation Properties of Metals"

Sb. "Vnutrennaya treniye v metallicheskikh materialakh" (Internal Friction in Metallic Materials), Moscow, Izd-vo "Nauka," 1970, pp 120-123

Abstract: The use of weakly singular integral operators for the description of mechanical relaxation of metals at high temperature is considered. The physical meaning of operator parameters taking into account behavioral features of polycrystal materials is elucidated. An integro-operating equation for average stresses in a sample with inhomogeneous structure is obtained. 1 table, 7 references.

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Conferences

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BASS, F. G., BARANSKIY, P. I., GUREVICH, YU. G., KOROLYUK, S. L., POTYKEVICH,
I. V., SAMOYLOVICH, A. G.

"All-Union Conference on the Physics of Semiconductors in Strong Magnetic and
Electric Fields"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 5, No 3, March 1971, pp
587-591

Abstract: This article contains brief reviews of the reports given at the All-Union Conference on the Physics of Semiconductors in Strong Magnetic and Electric Fields and held by the Scientific Council on Physics and Chemistry of Semiconductors of the USSR Academy of Sciences, the Institute of Physics of Metals of the USSR Academy of Sciences and the Problem Scientific Research Laboratory of Anisotropic Semiconductors of the Chernovtsy State University from 14 to 17 October 1970, in Chernovtsy.

The reports were concentrated around the following problems: 1) kinetic phenomena in semiconductors in strong magnetic fields; 2) kinetic and optical phenomena in strong electric and magnetic fields; 3) electron-hole plasma in strong electric and magnetic fields; 4) electric instabilities

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BASS, F. G., et al., *Fizika i Tekhnika Poluprovodnikov*, Vol 5, No 3, March 1971, pp 587-591

in strong fields; 5) dimensional effects and volt-ampere characteristics. Seventy-six reports were given. The next conference, which will be participated in by the member countries of the CEMA, will be held in September-October 1971, in Leningrad.

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1/2 032 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--OPERATIONAL FEATURES OF HEAVY DUTY ALUMINUM ELECTROLYTIC CELLS WITH
VARIOUS ALUMINA FEED RATES -U-
AUTHOR--(03)-KULIKOV, YU.V., KULESH, M.K., POTYLITSYN, G.A.
COUNTRY OF INFO--USSR P
SOURCE--TSVET. METAL. 1970, 43(3), 34-6
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, ELECTRONICS AND ELECTRICAL ENGR.
TOPIC TAGS--ELECTROLYTE, ALUMINUM, ALUMINUM OXIDE, CHEMICAL REACTION RATE,
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PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132163

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THREE GROUPS OF CELLS USING A SINGLE ELECTROLYTE COMPN. BUT WITH DIFFERENT METHODS AND AREAS OF FEEDING THE AL SUB2 O SUB3 WERE STUDIED. A STUDY OF THE AL SUB2 O SUB3 CHARGING RATE (EVERY 4 HR (12 TIMES); EVERY 3 HR (16 TIMES); AND EVERY 2 HR (24 TIMES)) SHOWED THAT AT THE 3 HR RATE THE TEMP. OF THE ELECTROLYTE WAS 1DEGREE LOWER THAN AT THE 4 HR RATE AS A RESULT OF DECREASED LOSS OF THE CATHODIC METAL. IN THE CASE OF THE 2 HR RATE, THE TEMP. WAS 2DEGREES LOWER THAN THAT OF THE 3 HR RATE. THIS 2 HR FEED RATE WITH COMBINED CRUST BREAKING AND AL SUB2 O SUB3 FEEDING IS NOT THE OPTIMUM, BECAUSE MORE FREQUENT FEEDING DECREASES THE NO. OF ANODE EFFECTS AND IMPROVES THE PROCESS. THE SELECTION OF THE FEED CYCLE DEPENDS ON THE PURITY OF THE AL SUB2 O SUB3, ELECTROLYTE COMPN., CONDITION OF THE ANODE, C.D., AND THE GEOMETRY OF THE CELL.

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